

# MANVI GUPTA

B22 Gaurikund Hostel, IIT Mandi - North Campus, H.P. 175005 (India)

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## EDUCATION

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**RWTH Aachen University, Germany**

October 2019 - February 2020

*RWTH Exchange Worldwide Scholarship Recipient (DAAD)*

**Indian Institute of Technology(IIT) Mandi**

August 2017 - Present

*Bachelor of Technology, Final year*

CGPA: 9.19/10

*Computer Science & Engineering*

## TECHNICAL STRENGTHS

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<b>Computer Languages</b>	C, C++, Python, Java, Scheme(Lisp)
<b>Software &amp; Tools</b>	Git, Redmine
<b>Web Technologies</b>	HTML, CSS, Flask, PHP
<b>Machine Learning</b>	Keras, Tensorflow, PyTorch, SciKit-Learn, MLflow
<b>Familiar Technologies</b>	MySQL, Hadoop, OpenCV, OpenMP

## WORK EXPERIENCE

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**Engineering Manager - Furrble<sup>1</sup>**

*Dec 2020*

Managed the technical team to build an Android App for Furrble using Flutter and Go.

**Product Intern - Adobe India Systems Private Limited**

*May 2020 - July 2020*

Built a Machine Learning pipeline on a distributed Kubernetes Platform & developed a POC for MLflow & Kubeflow capabilities.

Received *Pre-Placement Offer* for full time role as Member of Technical Staff based on excellent performance during the internship.

**Software Administrator - Book Nook IIT Mandi**

*Aug 2018 - Sept 2019*

Refactored and maintained the Book Renting Software of Recreational Library at IIT Mandi.

## PROJECTS

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**MUTUAL INFORMATION ESTIMATION IN DNNs**

September 2020 - Present

*Major Technical Project*

*Dr. Samar Agnihotri*

- **Task:** Currently working on implementing the Ensemble Dependency Graph Estimator (EDGE) for Scalable Mutual Information Estimation, and comparing the results with other estimators.
- **Goals:** To have a generalized algorithm to estimate the mutual information across hidden layers in a Deep Neural Network, irrespective of the model used.

**CALL TREE REVERSAL**

October 2019 - Present

*Using Mixed Integer Programming*

*Prof. Dr. Uwe Naumann*

- **Task:** Extending the existing Mixed Integer Programming (MIP) formulation of Call Tree Reversal with result checkpointing and parallel computation using GUROBI optimizer.
- **Use case:** Debugging (in high-performance scientific computing in particular), Adjoint Model computation in Algorithmic Differentiation

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<sup>1</sup>A Bangalore based start-up

## CIF VALIDATOR WITH REST API

April 2019 - June 2019

*A real world tool to validate Crystallographic Information Files (CIF)*

*Dr. Arti Kashyap*

- **Task:** Worked in a team of 3 to make a functional RESTful API for validating CIF files.
- CIF File is parsed using PyCODCIF and the frontend is built upon Barebone framework.
- **Collaboration:** In collaboration with the material science group at EPFL Switzerland. The tool is to be integrated on materialscloud.org.

## ADHD DISEASE DETECTION

January 2019 - February 2019

*Deep Learning*

*Dr. Aditya Nigam*

- Implemented a Neural Network model to classify **fMRI images** into 10 different components of human brain & find the correlation coefficients.
- **Challenges faced:** Small Data Set & limited knowledge of brain anatomy
- **Technologies Used:** Keras, Tensorflow

## RELEVANT COURSEWORK

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Mathematical Foundation of Computer Science  
Information and Database Systems  
Advanced Data Structures and Algorithms  
Computer Organization  
Operating Systems & Computer Networks

Machine Learning  
Paradigms of Programming  
Satisfiability Checking  
High Performance Computing  
Compiler Design

## POSITION OF RESPONSIBILITY

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### Founder Coordinator, ACM-W Chapter IIT Mandi

*Chairperson, August 2019 - August 2020*

- Set up the new chapter officially. Guided girl students about opportunities in the field of computing and connect the students to women leaders of the world.

### Undergraduate Teaching Assistant

- *Data Science III (Sep. 2020 - Dec. 2020)*
- *Information & Database Systems (Feb. 2020 - Sep. 2020)*

## SEMINARS & WORKSHOPS ATTENDED

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### ACM India Summer School

*Cyber Security and Data Analytics*

IIT Delhi

*July 2019*

- Learnt about security concerns on Social Media, and Cryptographic techniques used in SSL.
- Also got introduced to Natural Language Processing, as a method of encryption-decryption.

## ACADEMIC & EXTRA-CURRICULAR ACHIEVEMENTS

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- Winner of *Hacking the Google Maps*, online competition by Heuristics IIT Mandi, in May 2020.
- Runner up in Astronomy Club Hackweek-2018 held at IIT Mandi.
- Winner of Intra College Diwali Photography Competition 2017.
- First, among the 7 teams from the college in Flipkart GRiD Machine Learning challenge.
- Represented IIT Mandi at Inter IIT Cultural Meet 2017, at IIT Kanpur.
- Ranked in All-India Top 1% (amongst 11,86,000 candidates) in JEE Mains 2017 and Top 2.8% (amongst 1,59,540 candidates) in IIT-JEE Advanced 2017
- Qualified National Talent Search Examination(NTSE) 2015 stage 1.